

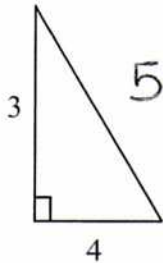
Answer the following questions using your knowledge of right triangles.

1. The **Pythagorean theorem** is

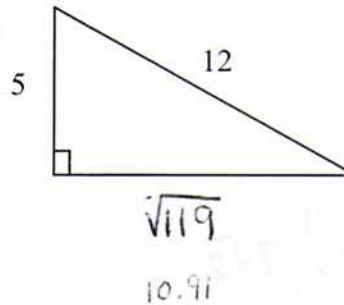
$$a^2 + b^2 = c^2$$

I. Find the measure of the missing side of the following right triangles.

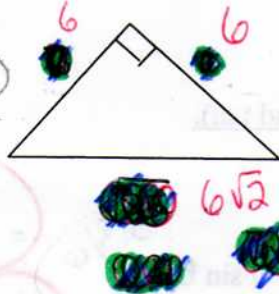
2.



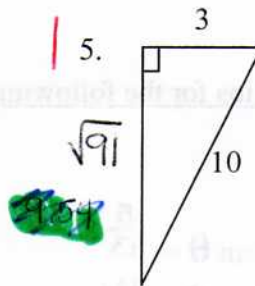
3.



4.



5.



II. Determine whether the triangles with the following sides are right, acute or obtuse.

6. $6^2 + 7^2 > 9^2$

6. 6, 7, 9

acute

7. $9^2 + 15^2 = 12^2$

7. 9, 15, 12

right

8. $3^2 + 2^2 < 4^2$

8. 3, 2, 4

obtuse

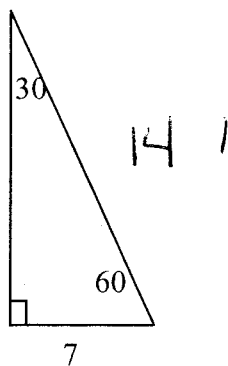
9. $(3\sqrt{2})^2 + 3^2 + 3^2 = 18$

9. $3\sqrt{2}, 3, 3$

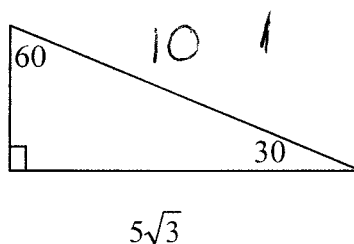
right

III. Use the special right triangle ratios to find the missing sides. (exact values only, no decimals)

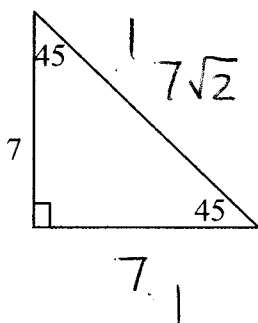
10.



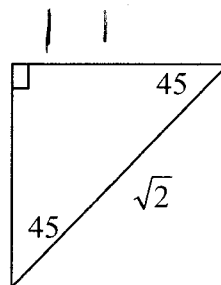
11.



12.

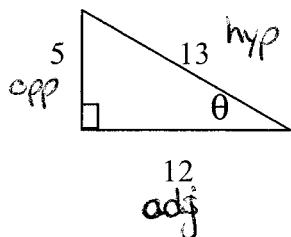


13.



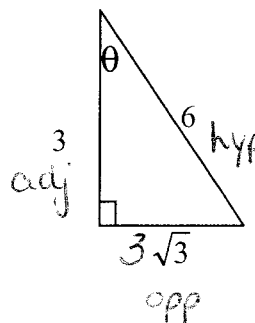
IV. Write the trigonometry ratios for the following triangles (sin, cos, and tan).

14.



$$\begin{aligned} \sin \theta &= \frac{5}{13} \\ \cos \theta &= \frac{12}{13} \\ \tan \theta &= \frac{5}{12} \end{aligned}$$

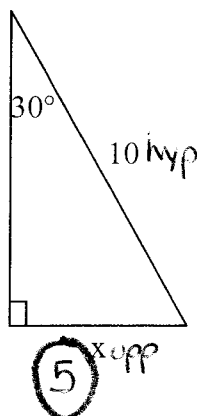
15.



$$\begin{aligned} \sin \theta &= \frac{3}{6} = \frac{1}{2} \\ \cos \theta &= \frac{3\sqrt{3}}{6} = \frac{\sqrt{3}}{2} \\ \tan \theta &= \frac{3}{3\sqrt{3}} = \frac{1}{\sqrt{3}} \end{aligned}$$

V. Use Trigonometry to solve for the missing sides.

16.



$$\sin 30 = \frac{x}{10}$$

$$10 \sin 30 = x$$

$$\cos 30 = \frac{y}{10}$$

$$10 \cos 30 = y$$

$$8.66 = y$$

$$\cos 20 = \frac{3\sqrt{2}}{y}$$

$$\tan 20 = \frac{x}{3\sqrt{2}}$$

$$3\sqrt{2} \tan 20 = x$$

$$3\sqrt{2} \text{ adj}$$